



HVAC System Loads Calculation Report

Project	
Project name	Building
Project address	
Client / Owner name	
Design alternative	Alternative system No.1
Prepared by	
Company name	
Report date	November 21, 2025
DesignBuilder version	v2025.1

Project Loads Summary	
Cooling conditioned floor area (m ²)	3581.0
Cooling load peak (kW)	116.48
Cooling load density (W/m ²)	32.53
Time of max cooling	Jun 15:00
Heating conditioned floor area (m ²)	3581.0
Heating load peak (kW)	326.54
Heating load density (W/m ²)	91.19

Site Location	
Site name	Site
Building name	Building
Location template	LONDON/GATWICK ARPT
Elevation (m)	62.0
Latitude (°)	51.15°
Longitude (°)	-0.18°



Heating Design - Design Conditions	
Design day conditions	Heating 99.6% coverage
Outside design temperature (°C)	-4.4
Wind speed (m/s)	1.2
Wind direction (°)	70°

Heating Design - Calculation Options	
Simulation method	1-EnergyPlus
Temperature control	1-Air Temperature
Design margin	1.25
Totals method	2-System

Cooling Design - Design Conditions												
Design option	0.4% dry-bulb and mean coincident wet-bulb											
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum dry-bulb temperature (°C)	-	-	-	-	-	27.2	-	-	-	-	-	-
Mean coincident wet-bulb temperature (°C)	-	-	-	-	-	18.7	-	-	-	-	-	-
Minimum dry-bulb temperature (°C)	-	-	-	-	-	17.8	-	-	-	-	-	-

Cooling Design - Calculation Options	
Simulation method	1-EnergyPlus
Temperature control	1-Air Temperature
Exclude natural ventilation	No
Exclude mechanical ventilation	No
Exclude heat recovery	Yes
Sizing Method	1-ASHRAE
Design margin	1.15
Start month	Jun
End month	Jun
Totals method	2-System
Peak method	2-Coincident
Coincident definition method	1-Building



Zone Checksums

00 Ground Faculty 2

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat.	Plenum Sens. +Lat	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak	Coil Peak	Percent Of Total			
	W	W	W	(%)	W	(%)	Space Sens	Tot Sens	(%)			
Envelope Loads							Envelope Loads					
Roof+Ceiling Cond	21.17	0.00	21.17	5.93	21.17	20.45	Roof+Ceiling Cond	-57.87	-57.87	1.52		
Solar Gain Windows	1019.88	0.00	1019.88	285.82	1019.88	985.24	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	171.21	0.00	171.21	47.98	171.21	165.39	Window Cond	-1370.79	-1370.79	36.02		
Wall+Partition Cond	-166.41	0.00	-166.41	-46.63	-166.41	-160.76	Wall+Partition Cond	-660.83	-660.83	17.37		
Floor, int/ext/grnd	-1090.18	0.00	-1090.18	-305.52	-1090.18	-1053.15	Floor, int/ext/grnd	-8.78	-8.78	0.23		
Infiltration	147.85	0.00	147.85	41.44	147.85	-160.76	Infiltration	-1310.46	-1310.46	34.44		
Sub Total ==>	103.52	0.00	103.52	29.01	103.52	0.00	Sub Total ==>	-3408.73	-3408.73	89.58		
Internal Loads							Internal Loads					
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	253.31	0.00	253.31	70.99			Ventilation Load	-396.66	-396.66	10.42		
Grand Total ==>	356.83	0.00	356.83	100.00	103.52	100.00	Grand Total ==>	-3805.39	-3805.39	100.00		
Sim Calcs Total ==>	347.70	0.00	347.70									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.03	0.24

ENGINEERING CKS		
	Cooling	Heating
% OA	70.01	6.41
l/s/m ²	0.37	3.19
l/s/ton	243.73	-
m ² /ton	653.94	-
W/m ²	5.38	63.97
No. People	6.47	0.00

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION					
	Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass	Ratio	Capacity	Coil Airflow	Ent	Lvg			
	ton	kW	m ³ /s	°C	°C	g/kg	°C	°C	g/kg	m ²	m ²	%	kW	m ³ /s	°C	°C			
Main Clg	0.11	0.40	0.40	0.03	26.24	18.42	10.13	15.85	14.78	10.13	Floor	74.35	0.00	0.00	Main Htg	4.76	0.24	19.37	35.00
Total	0.11	0.40	0.00								Part	0.00	0.00	0.00	Total	4.76			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

00 Ground LAB 2

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat. W	Plenum Sens. +Lat. W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)			
Envelope Loads							Envelope Loads					
Roof+Ceiling Cond	-1160.74	0.00	-1160.74	-11.68	-1160.74	-54.31	Roof+Ceiling Cond	-402.23	-402.23	1.32		
Solar Gain Windows	12916.60	0.00	12916.60	129.96	12916.60	604.32	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	2018.03	0.00	2018.03	20.30	2018.03	94.42	Window Cond	-3398.71	-3398.71	11.18		
Wall+Partition Cond	-906.92	0.00	-906.92	-9.12	-906.92	-42.43	Wall+Partition Cond	-6836.66	-6836.66	22.49		
Floor, int/ext/grnd	-11609.96	0.00	-11609.96	-116.81	-11609.96	-543.19	Floor, int/ext/grnd	259.57	259.57	-0.85		
Infiltration	880.36	0.00	880.36	8.86	880.36	-42.43	Infiltration	-7802.90	-7802.90	25.67		
Sub Total ==>	2137.37	0.00	2137.37	21.51	2137.37	0.00	Sub Total ==>	-18180.93	-18180.93	59.81		
Internal Loads							Internal Loads					
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	7801.57	0.00	7801.57	78.49			Ventilation Load	-12216.26	-12216.26	40.19		
Grand Total ==>	9938.94	0.00	9938.94	100.00	2137.37	100.00	Grand Total ==>	-30397.19	-30397.19	100.00		
Sim Calcs Total ==>	9826.84	0.00	9826.84									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.78	2.34

ENGINEERING CKS		
	Cooling	Heating
% OA	71.78	20.00
l/s/m ²	1.77	5.29
l/s/ton	243.73	-
m ² /ton	137.77	-
W/m ²	25.53	85.83
No. People	199.22	0.00

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION					
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C			Leave DB/WB/HR °C			Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C			
Main Clg	3.21	11.30	11.30	0.78	26.30	18.44	10.13	15.90	14.80	10.13	Floor	442.71	0.00	0.00	Main Htg	38.00	2.34	15.92	28.56
Total	3.21	11.30	0.00								Part	0.00	0.00	0.00	Total	38.00			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

00 Ground Lecture Hall

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat. W	Plenum Sens. +Lat. W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)			
Envelope Loads							Envelope Loads					
Roof+Ceiling Cond	1112.86	0.00	1112.86	19.30	1112.86	96.58	Roof+Ceiling Cond	-203.51	-203.51	1.24		
Solar Gain Windows	1540.41	0.00	1540.41	26.72	1540.41	133.68	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	259.58	0.00	259.58	4.50	259.58	22.53	Window Cond	-2248.45	-2248.45	13.66		
Wall+Partition Cond	167.29	0.00	167.29	2.90	167.29	14.52	Wall+Partition Cond	-3215.53	-3215.53	19.54		
Floor, int/ext/grnd	-2346.17	0.00	-2346.17	-40.69	-2346.17	-203.61	Floor, int/ext/grnd	140.67	140.67	-0.85		
Infiltration	418.30	0.00	418.30	7.26	418.30	14.52	Infiltration	-3707.50	-3707.50	22.53		
Sub Total ==>	1152.27	0.00	1152.27	19.99	1152.27	0.00	Sub Total ==>	-9234.32	-9234.32	56.11		
Internal Loads							Internal Loads					
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	4613.00	0.00	4613.00	80.01			Ventilation Load	-7223.37	-7223.37	43.89		
Grand Total ==>	5765.28	0.00	5765.28	100.00	1152.27	100.00	Grand Total ==>	-16457.69	-16457.69	100.00		
Sim Calcs Total ==>	5747.12	0.00	5747.12									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.46	1.39

ENGINEERING CKS		
	Cooling	Heating
% OA	72.00	20.00
l/s/m²	2.18	6.59
l/s/ton	243.73	-
m²/ton	111.93	-
W/m²	31.42	97.80
No. People	117.80	0.00

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION					
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C			Leave DB/WB/HR °C			Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C			
Main Clg	1.88	6.61	6.61	0.46	26.30	18.44	10.13	15.91	14.80	10.13	Floor	210.35	0.00	0.00	Main Htg	20.57	1.39	15.92	27.49
Total	1.88	6.61	0.00								Part	0.00	0.00	0.00	Total	20.57			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

00 Ground Faculty 1

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat. W	Plenum Sens. +Lat. W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)			
Envelope Loads							Envelope Loads					
Roof+Ceiling Cond	143.27	0.00	143.27	28.35	143.27	45.86	Roof+Ceiling Cond	-93.05	-93.05	2.24		
Solar Gain Windows	466.43	0.00	466.43	92.31	466.43	149.31	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	99.74	0.00	99.74	19.74	99.74	31.93	Window Cond	-748.76	-748.76	17.99		
Wall+Partition Cond	202.17	0.00	202.17	40.01	202.17	64.72	Wall+Partition Cond	-2156.14	-2156.14	51.80		
Floor, int/ext/grnd	-711.83	0.00	-711.83	-140.87	-711.83	-227.87	Floor, int/ext/grnd	135.96	135.96	-3.27		
Infiltration	112.60	0.00	112.60	22.28	112.60	64.72	Infiltration	-998.00	-998.00	23.98		
Sub Total ==>	312.38	0.00	312.38	61.82	312.38	0.00	Sub Total ==>	-3860.00	-3860.00	92.74		
Internal Loads							Internal Loads					
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	192.91	0.00	192.91	38.18			Ventilation Load	-302.08	-302.08	7.26		
Grand Total ==>	505.29	0.00	505.29	100.00	312.38	100.00	Grand Total ==>	-4162.07	-4162.07	100.00		
Sim Calcs Total ==>	495.96	0.00	495.96									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.04	0.27

ENGINEERING CKS		
	Cooling	Heating
% OA	55.48	4.31
l/s/m ²	0.70	4.75
l/s/ton	243.73	-
m ² /ton	349.14	-
W/m ²	10.07	91.88
No. People	4.93	0.00

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION					
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C			Leave DB/WB/HR °C			Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C			
Main Clg	0.16	0.57	0.57	0.04	25.78	18.27	10.13	15.38	14.60	10.13	Floor	56.62	0.00	0.00	Main Htg	5.20	0.27	19.90	35.00
Total	0.16	0.57	0.00								Part	0.00	0.00	0.00	Total	5.20			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

00 Ground LAB 1

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat.	Plenum Sens. +Lat	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total			
	W	W	W	(%)	W	(%)	W	W	(%)			
Envelope Loads												
Roof+Ceiling Cond	490.10	0.00	490.10	19.15	490.10	81.84	Roof+Ceiling Cond	-171.88	-171.88	1.82		
Solar Gain Windows	644.92	0.00	644.92	25.20	644.92	107.69	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	129.15	0.00	129.15	5.05	129.15	21.57	Window Cond	-971.80	-971.80	10.29		
Wall+Partition Cond	301.86	0.00	301.86	11.80	301.86	50.41	Wall+Partition Cond	-3511.71	-3511.71	37.20		
Floor, int/ext/grnd	-1188.35	0.00	-1188.35	-46.44	-1188.35	-198.44	Floor, int/ext/grnd	245.21	245.21	-2.60		
Infiltration	221.18	0.00	221.18	8.64	221.18	50.41	Infiltration	-1960.40	-1960.40	20.77		
Sub Total ==>	598.85	0.00	598.85	23.40	598.85	0.00	Sub Total ==>	-6370.58	-6370.58	67.49		
Internal Loads												
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	1960.07	0.00	1960.07	76.60			Ventilation Load	-3069.22	-3069.22	32.51		
Grand Total ==>	2558.92	0.00	2558.92	100.00	598.85	100.00	Grand Total ==>	-9439.80	-9439.80	100.00		
Sim Calcs Total ==>												
	2556.42	0.00	2556.42									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.20	0.59

ENGINEERING CKS		
	Cooling	Heating
% OA	71.07	20.00
l/s/m ²	1.83	5.29
l/s/ton	243.73	-
m ² /ton	133.06	-
W/m ²	26.43	106.08
No. People	50.05	0.00

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION					
	Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass	Ratio	Capacity	Coil Airflow	Ent	Lvg			
	ton	kW	m ³ /s	°C	°C	g/kg	°C	°C	g/kg	m ²	m ²	%	kW	m ³ /s	°C	°C			
Main Clg	0.84	2.94	2.94	0.20	26.27	18.43	10.13	15.88	14.79	10.13	Floor	111.23	0.00	0.00	Main Htg	11.80	0.59	15.92	31.54
Total	0.84	2.94	0.00								Part	0.00	0.00	0.00	Total	11.80			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

03 Third Faculty 2

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat. W	Plenum Sens. +Lat. W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)			
Envelope Loads							Envelope Loads					
Roof+Ceiling Cond	-33.24	0.00	-33.24	-2.53	-33.24	-3.13	Roof+Ceiling Cond	-897.40	-897.40	20.73		
Solar Gain Windows	1022.00	0.00	1022.00	77.76	1022.00	96.28	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	85.96	0.00	85.96	6.54	85.96	8.10	Window Cond	-1386.31	-1386.31	32.03		
Wall+Partition Cond	-25.78	0.00	-25.78	-1.96	-25.78	-2.43	Wall+Partition Cond	-649.64	-649.64	15.01		
Floor, int/ext/grnd	-117.86	0.00	-117.86	-8.97	-117.86	-11.10	Floor, int/ext/grnd	188.01	188.01	-4.34		
Infiltration	130.39	0.00	130.39	9.92	130.39	-2.43	Infiltration	-1186.65	-1186.65	27.41		
Sub Total ==>	1061.46	0.00	1061.46	80.76	1061.46	0.00	Sub Total ==>	-3931.99	-3931.99	90.84		
Internal Loads							Internal Loads					
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	252.91	0.00	252.91	19.24			Ventilation Load	-396.66	-396.66	9.16		
Grand Total ==>	1314.37	0.00	1314.37	100.00	1061.46	100.00	Grand Total ==>	-4328.65	-4328.65	100.00		
Sim Calcs Total ==>	1578.03	0.00	1578.03									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.10	0.27

ENGINEERING CKS		
	Cooling	Heating
% OA	38.29	5.56
l/s/m ²	1.40	3.68
l/s/ton	202.06	-
m ² /ton	144.09	-
W/m ²	24.41	72.76
No. People	6.47	0.00

COOLING COIL SELECTION										AREAS			HEATING COIL SELECTION			
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C		Leave DB/WB/HR °C		Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C		
Main Clg	0.52	1.81	1.50	0.10	25.23	17.65	9.58	14.83	13.07	8.72	Main Htg	5.41	0.27	19.59	35.00	
Total	0.52	1.81	0.00					Floor	74.35	0.00	0.00	Total	5.41			
								Part	0.00	0.00	0.00					
								ExFlr	0.00	0.00	0.00					
								Roof	0.00	0.00	0.00					
								Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

03 Third LAB 2

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat. W	Plenum Sens. +Lat. W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)			
Envelope Loads							Envelope Loads					
Roof+Ceiling Cond	-1534.12	0.00	-1534.12	-10.28	-1534.12	-21.54	Roof+Ceiling Cond	-4832.05	-4832.05	14.70		
Solar Gain Windows	12881.46	0.00	12881.46	86.31	12881.46	180.83	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	1796.81	0.00	1796.81	12.04	1796.81	25.22	Window Cond	-3409.67	-3409.67	10.37		
Wall+Partition Cond	-1197.58	0.00	-1197.58	-8.02	-1197.58	-16.81	Wall+Partition Cond	-6563.81	-6563.81	19.96		
Floor, int/ext/grnd	-5599.52	0.00	-5599.52	-37.52	-5599.52	-78.61	Floor, int/ext/grnd	1207.78	1207.78	-3.67		
Infiltration	776.37	0.00	776.37	5.20	776.37	-16.81	Infiltration	-7065.63	-7065.63	21.49		
Sub Total ==>	7123.42	0.00	7123.42	47.73	7123.42	0.00	Sub Total ==>	-20663.38	-20663.38	62.85		
Internal Loads							Internal Loads					
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	7801.57	0.00	7801.57	52.27			Ventilation Load	-12216.26	-12216.26	37.15		
Grand Total ==>	14924.99	0.00	14924.99	100.00	7123.42	100.00	Grand Total ==>	-32879.64	-32879.64	100.00		
Sim Calcs Total ==>										14817.39	0.00	14817.39

AIRFLOWS		
	Cooling	Heating
Diffuser	1.18	2.34

ENGINEERING CKS		
	Cooling	Heating
% OA	62.78	20.00
l/s/m ²	2.67	5.29
l/s/ton	243.73	-
m ² /ton	91.37	-
W/m ²	38.49	92.83
No. People	199.22	0.00

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION				
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C °C g/kg			Leave DB/WB/HR °C °C g/kg			Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C		
Main Clg	4.85	17.04	1.18	26.01	18.34	10.13	15.62	14.69	10.13	Floor	442.71	0.00	0.00	Main Htg	41.10	2.34	15.92	29.59
Total	4.85	17.04	0.00							Part	0.00	0.00	0.00	Total	41.10			
										ExFlr	0.00	0.00	0.00					
										Roof	0.00	0.00	0.00					
										Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

03 Third Lecture Hall

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat. W	Plenum Sens. +Lat. W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)			
Envelope Loads							Envelope Loads					
Roof+Ceiling Cond	406.21	0.00	406.21	4.86	406.21	10.84	Roof+Ceiling Cond	-2345.17	-2345.17	13.23		
Solar Gain Windows	1667.96	0.00	1667.96	19.95	1667.96	44.50	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	145.50	0.00	145.50	1.74	145.50	3.88	Window Cond	-2266.13	-2266.13	12.79		
Wall+Partition Cond	113.18	0.00	113.18	1.35	113.18	3.02	Wall+Partition Cond	-3095.58	-3095.58	17.47		
Floor, int/ext/grnd	1046.76	0.00	1046.76	12.52	1046.76	27.92	Floor, int/ext/grnd	565.14	565.14	-3.19		
Infiltration	368.89	0.00	368.89	4.41	368.89	3.02	Infiltration	-3357.22	-3357.22	18.94		
Sub Total ==>	3748.50	0.00	3748.50	44.83	3748.50	0.00	Sub Total ==>	-10498.97	-10498.97	59.24		
Internal Loads							Internal Loads					
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	4613.00	0.00	4613.00	55.17			Ventilation Load	-7223.37	-7223.37	40.76		
Grand Total ==>	8361.50	0.00	8361.50	100.00	3748.50	100.00	Grand Total ==>	-17722.34	-17722.34	100.00		
Sim Calcs Total ==>	8344.86	0.00	8344.86									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.67	1.39

ENGINEERING CKS		
	Cooling	Heating
% OA	63.91	20.00
l/s/m ²	3.16	6.59
l/s/ton	243.73	-
m ² /ton	77.09	-
W/m ²	45.62	105.31
No. People	117.80	0.00

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION					
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C °C g/kg			Leave DB/WB/HR °C °C g/kg			Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C			
Main Clg	2.73	9.60	9.60	0.67	26.05	18.36	10.13	15.65	14.70	10.13	Floor	210.35	0.00	0.00	Main Htg	22.15	1.39	15.92	28.38
Total	2.73	9.60	0.00								Part	0.00	0.00	0.00	Total	22.15			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

03 Third Faculty 1

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat.	Plenum Sens. +Lat	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total			
	W	W	W	(%)	W	(%)	W	W	(%)			
Envelope Loads												
Roof+Ceiling Cond	75.75	0.00	75.75	6.18	75.75	7.34	Roof+Ceiling Cond	-630.26	-630.26	13.69		
Solar Gain Windows	486.39	0.00	486.39	39.71	486.39	47.11	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	51.74	0.00	51.74	4.22	51.74	5.01	Window Cond	-758.87	-758.87	16.49		
Wall+Partition Cond	191.35	0.00	191.35	15.62	191.35	18.53	Wall+Partition Cond	-2155.78	-2155.78	46.84		
Floor, int/ext/grnd	127.86	0.00	127.86	10.44	127.86	12.39	Floor, int/ext/grnd	148.11	148.11	-3.22		
Infiltration	99.30	0.00	99.30	8.11	99.30	18.53	Infiltration	-903.70	-903.70	19.63		
Sub Total ==>	1032.39	0.00	1032.39	84.28	1032.39	0.00	Sub Total ==>	-4300.49	-4300.49	93.44		
Internal Loads												
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	192.57	0.00	192.57	15.72			Ventilation Load	-302.08	-302.08	6.56		
Grand Total ==>	1224.96	0.00	1224.96	100.00	1032.39	100.00	Grand Total ==>	-4602.57	-4602.57	100.00		
Sim Calcs Total ==>												
	1437.64	0.00	1437.64									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.10	0.30

ENGINEERING CKS		
	Cooling	Heating
% OA	33.68	3.87
l/s/m ²	1.71	5.29
l/s/ton	206.38	-
m ² /ton	120.45	-
W/m ²	29.20	101.60
No. People	4.93	0.00

COOLING COIL SELECTION										AREAS			HEATING COIL SELECTION						
	Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR		Leave DB/WB/HR		Gross Total	Glass	Ratio	Capacity	Coil Airflow	Ent	Lvg					
	ton	kW	m ³ /s	°C	°C	g/kg	°C	°C	g/kg	m ²	m ²	%	kW	m ³ /s	°C	°C			
Main Clg	0.47	1.65	1.40	0.10	25.08	17.51	9.48	14.68	13.02	8.73	Floor	56.62	0.00	0.00	Main Htg	5.75	0.30	20.02	35.00
Total	0.47	1.65	0.00								Part	0.00	0.00	0.00	Total	5.75			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

03 Third Tutorial

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat. W	Plenum Sens. +Lat. W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)			
Envelope Loads							Envelope Loads					
Roof+Ceiling Cond	179.21	0.00	179.21	4.94	179.21	10.76	Roof+Ceiling Cond	-1180.33	-1180.33	11.56		
Solar Gain Windows	618.39	0.00	618.39	17.06	618.39	37.14	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	85.78	0.00	85.78	2.37	85.78	5.15	Window Cond	-981.24	-981.24	9.61		
Wall+Partition Cond	209.36	0.00	209.36	5.77	209.36	12.57	Wall+Partition Cond	-3495.99	-3495.99	34.25		
Floor, int/ext/grnd	377.45	0.00	377.45	10.41	377.45	22.67	Floor, int/ext/grnd	293.72	293.72	-2.88		
Infiltration	195.06	0.00	195.06	5.38	195.06	12.57	Infiltration	-1775.18	-1775.18	17.39		
Sub Total ==>	1665.24	0.00	1665.24	45.93	1665.24	0.00	Sub Total ==>	-7139.01	-7139.01	69.93		
Internal Loads							Internal Loads					
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	1960.07	0.00	1960.07	54.07			Ventilation Load	-3069.22	-3069.22	30.07		
Grand Total ==>	3625.31	0.00	3625.31	100.00	1665.24	100.00	Grand Total ==>	-10208.23	-10208.23	100.00		
Sim Calcs Total ==>	3622.95	0.00	3622.95									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.29	0.59

ENGINEERING CKS		
	Cooling	Heating
% OA	63.42	20.00
l/s/m ²	2.60	5.29
l/s/ton	243.73	-
m ² /ton	93.89	-
W/m ²	37.46	114.72
No. People	50.05	0.00

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION					
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C			Leave DB/WB/HR °C			Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C			
Main Clg	1.18	4.17	4.17	0.29	26.03	18.35	10.13	15.64	14.70	10.13	Floor	111.23	0.00	0.00	Main Htg	12.76	0.59	15.92	32.82
Total	1.18	4.17	0.00								Part	0.00	0.00	0.00	Total	12.76			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

01 First Faculty 2

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat.	Plenum Sens. +Lat	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total			
	W	W	W	(%)	W	(%)	W	W	(%)			
Envelope Loads												
Roof+Ceiling Cond	-98.54	0.00	-98.54	-11.04	-98.54	-15.41	-82.53	-82.53	2.18			
Solar Gain Windows	1019.95	0.00	1019.95	114.24	1019.95	159.49	0.00	0.00	0.00			
Window Cond	116.70	0.00	116.70	13.07	116.70	18.25	-1394.03	-1394.03	36.81			
Wall+Partition Cond	-86.63	0.00	-86.63	-9.70	-86.63	-13.55	-662.16	-662.16	17.49			
Floor, int/ext/grnd	-458.68	0.00	-458.68	-51.37	-458.68	-71.72	60.54	60.54	-1.60			
Infiltration	146.72	0.00	146.72	16.43	146.72	-13.55	-1311.86	-1311.86	34.64			
Sub Total ==>	639.53	0.00	639.53	71.63	639.53	0.00	-3390.03	-3390.03	89.52			
Internal Loads												
Lights	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
People	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Misc	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Ventilation Load	253.31	0.00	253.31	28.37			-396.66	-396.66	10.48			
Grand Total ==>	892.84	0.00	892.84	100.00	639.53	100.00	-3786.69	-3786.69	100.00			
Sim Calcs Total ==>												
	884.21	0.00	884.21									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.07	0.24

ENGINEERING CKS		
	Cooling	Heating
% OA	47.86	6.45
l/s/m ²	0.95	3.17
l/s/ton	243.73	-
m ² /ton	257.15	-
W/m ²	13.68	63.65
No. People	6.47	0.00

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION					
	Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass	Ratio	Capacity	Coil Airflow	Ent	Lvg			
	ton	kW	m ³ /s	°C	°C	g/kg	°C	°C	g/kg	m ²	m ²	%	kW	m ³ /s	°C	°C			
Main Clg	0.29	1.02	1.02	0.07	25.53	18.19	10.13	15.14	14.51	10.13	Floor	74.35	0.00	0.00	Main Htg	4.73	0.24	19.36	35.00
Total	0.29	1.02	0.00								Part	0.00	0.00	0.00	Total	4.73			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

01 First LAB 2

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat. W	Plenum Sens. +Lat. W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)			
Envelope Loads							Envelope Loads					
Roof+Ceiling Cond	-1851.15	0.00	-1851.15	-14.39	-1851.15	-36.58	Roof+Ceiling Cond	-545.38	-545.38	1.79		
Solar Gain Windows	12916.05	0.00	12916.05	100.42	12916.05	255.26	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	1880.87	0.00	1880.87	14.62	1880.87	37.17	Window Cond	-3446.00	-3446.00	11.32		
Wall+Partition Cond	-1098.71	0.00	-1098.71	-8.54	-1098.71	-21.71	Wall+Partition Cond	-6829.87	-6829.87	22.44		
Floor, int/ext/grnd	-7660.76	0.00	-7660.76	-59.56	-7660.76	-151.40	Floor, int/ext/grnd	414.10	414.10	-1.36		
Infiltration	873.62	0.00	873.62	6.79	873.62	-21.71	Infiltration	-7811.22	-7811.22	25.67		
Sub Total ==>	5059.91	0.00	5059.91	39.34	5059.91	0.00	Sub Total ==>	-18218.37	-18218.37	59.86		
Internal Loads							Internal Loads					
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	7801.57	0.00	7801.57	60.66			Ventilation Load	-12216.26	-12216.26	40.14		
Grand Total ==>	12861.48	0.00	12861.48	100.00	5059.91	100.00	Grand Total ==>	-30434.63	-30434.63	100.00		
Sim Calcs Total ==>	12751.60	0.00	12751.60									

AIRFLOWS		
	Cooling	Heating
Diffuser	1.02	2.34

ENGINEERING CKS		
	Cooling	Heating
% OA	66.22	20.00
l/s/m ²	2.30	5.29
l/s/ton	243.73	-
m ² /ton	106.17	-
W/m ²	33.12	85.93
No. People	199.22	0.00

COOLING COIL SELECTION										
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR		
	ton	kW	kW	m ³ /s	°C	°C	g/kg	°C	°C	g/kg
Main Clg	4.17	14.66	14.66	1.02	26.12	18.38	10.13	15.73	14.73	10.13
Total	4.17	14.66	0.00							

AREAS			
	Gross Total	Glass	Ratio
	m ²	m ²	%
Floor Part	442.71	0.00	0.00
ExFlr	0.00	0.00	0.00
Roof	0.00	0.00	0.00
Wall	0.00	0.00	0.00

HEATING COIL SELECTION				
	Capacity	Coil Airflow	Ent	Lvg
	kW	m ³ /s	°C	°C
Main Htg	38.04	2.34	15.92	28.58
Total	38.04			

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

01 First Lecture Hall

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES				
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB				
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating		
	Space Sens. +Lat. W	Plenum Sens. +Lat. W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)					
Envelope Loads							Envelope Loads							
Roof+Ceiling Cond	704.97	0.00	704.97	10.61	704.97	24.01	Roof+Ceiling Cond	-262.62	-262.62	1.74				
Solar Gain Windows	1542.59	0.00	1542.59	23.22	1542.59	52.55	Solar Gain Windows	0.00	0.00	0.00				
Window Cond	170.15	0.00	170.15	2.56	170.15	5.80	Window Cond	-2282.48	-2282.48	15.15				
Wall+Partition Cond	87.77	0.00	87.77	1.32	87.77	2.99	Wall+Partition Cond	-3218.94	-3218.94	21.36				
Floor, int/ext/grnd	15.02	0.00	15.02	0.23	15.02	0.51	Floor, int/ext/grnd	209.92	209.92	-1.39				
Infiltration	415.09	0.00	415.09	6.25	415.09	2.99	Infiltration	-3711.45	-3711.45	24.63				
Sub Total ==>	2935.59	0.00	2935.59	44.19	2935.59	0.00	Sub Total ==>	-9265.57	-9265.57	61.48				
Internal Loads							Internal Loads							
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00				
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00				
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00				
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00				
Ventilation Load	3706.88	0.00	3706.88	55.81			Ventilation Load	-5804.49	-5804.49	38.52				
Grand Total ==>	6642.46	0.00	6642.46	100.00	2935.59	100.00	Grand Total ==>	-15070.07	-15070.07	100.00				
Sim Calcs Total ==>										6625.00	0.00	6625.00		

AIRFLOWS		
	Cooling	Heating
Diffuser	0.53	1.11

ENGINEERING CKS		
	Cooling	Heating
% OA	64.19	20.00
l/s/m ²	2.51	5.29
l/s/ton	243.73	-
m ² /ton	97.10	-
W/m ²	36.22	89.55
No. People	94.66	0.00

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION					
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C			Leave DB/WB/HR °C			Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C			
Main Clg	2.17	7.62	7.62	0.53	26.05	18.36	10.13	15.66	14.71	10.13	Floor	210.35	0.00	0.00	Main Htg	18.84	1.11	15.92	29.11
Total	2.17	7.62	0.00								Part	0.00	0.00	0.00	Total	18.84			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

01 First Faculty 1

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES																										
Peaked at Time: Mo/Hr: 6 / 15:00					Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB																										
Outside Air: OADB/WB/RH: 27.2 / 18.7 / 44.7					OADB: 27.2		OADB: -4.4			Cooling 14.86 Heating 35.00																										
Space Sens. +Lat. W	Plenum Sens. +Lat W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)																												
Envelope Loads							Envelope Loads			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">AIRFLOWS</th> </tr> <tr> <td></td> <th style="text-align: center;">Cooling</th> <th style="text-align: center;">Heating</th> </tr> </thead> <tbody> <tr> <td>Diffuser</td> <td style="text-align: center;">0.08</td> <td style="text-align: center;">0.27</td> </tr> </tbody> </table>			AIRFLOWS				Cooling	Heating	Diffuser	0.08	0.27															
AIRFLOWS																																				
	Cooling	Heating																																		
Diffuser	0.08	0.27																																		
Roof+Ceiling Cond	60.38	0.00	60.38	6.27	60.38	7.83	Roof+Ceiling Cond	-91.03	-91.03	2.14																										
Solar Gain Windows	468.50	0.00	468.50	48.63	468.50	60.79	Solar Gain Windows	0.00	0.00	0.00																										
Window Cond	76.09	0.00	76.09	7.90	76.09	9.87	Window Cond	-757.53	-757.53	17.83																										
Wall+Partition Cond	170.77	0.00	170.77	17.73	170.77	22.16	Wall+Partition Cond	-2194.10	-2194.10	51.65																										
Floor, int/ext/grnd	-116.77	0.00	-116.77	-12.12	-116.77	-15.15	Floor, int/ext/grnd	95.43	95.43	-2.25																										
Infiltration	111.74	0.00	111.74	11.60	111.74	22.16	Infiltration	-999.07	-999.07	23.52																										
Sub Total ==>	770.71	0.00	770.71	80.00	770.71	0.00	Sub Total ==>	-3946.30	-3946.30	92.89																										
Internal Loads							Internal Loads			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">ENGINEERING CKS</th> </tr> <tr> <td></td> <th style="text-align: center;">Cooling</th> <th style="text-align: center;">Heating</th> </tr> </thead> <tbody> <tr> <td>% OA</td> <td style="text-align: center;">39.28</td> <td style="text-align: center;">4.22</td> </tr> <tr> <td>l/s/m²</td> <td style="text-align: center;">1.34</td> <td style="text-align: center;">4.85</td> </tr> <tr> <td>l/s/ton</td> <td style="text-align: center;">201.17</td> <td style="text-align: center;">-</td> </tr> <tr> <td>m²/ton</td> <td style="text-align: center;">149.58</td> <td style="text-align: center;">-</td> </tr> <tr> <td>W/m²</td> <td style="text-align: center;">23.51</td> <td style="text-align: center;">93.78</td> </tr> <tr> <td>No. People</td> <td style="text-align: center;">4.93</td> <td style="text-align: center;">0.00</td> </tr> </tbody> </table>			ENGINEERING CKS				Cooling	Heating	% OA	39.28	4.22	l/s/m ²	1.34	4.85	l/s/ton	201.17	-	m ² /ton	149.58	-	W/m ²	23.51	93.78	No. People	4.93	0.00
ENGINEERING CKS																																				
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W/m ²	23.51	93.78																																		
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Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00																										
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00																										
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00																										
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00																										
Ventilation Load	192.63	0.00	192.63	20.00			Ventilation Load	-302.08	-302.08	7.11																										
Grand Total ==>	963.33	0.00	963.33	100.00	770.71	100.00	Grand Total ==>	-4248.38	-4248.38	100.00																										
Sim Calcs Total ==>																																				
Sim Calcs Total ==>																																				

COOLING COIL SELECTION										AREAS			HEATING COIL SELECTION						
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C °C g/kg			Leave DB/WB/HR °C °C g/kg			Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C			
Main Clg	0.38	1.33	1.10	0.08	25.26	17.69	9.63	14.86	13.11	8.74	Floor	56.62	0.00	0.00	Main Htg	5.31	0.27	19.93	35.00
Total	0.38	1.33	0.00								Part	0.00	0.00	0.00	Total	5.31			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

01 First LAB 1

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES																										
Peaked at Time: Mo/Hr: 6 / 15:00					Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB																										
Outside Air: OADB/WB/RH: 27.2 / 18.7 / 44.7					OADB: 27.2		OADB: -4.4			Cooling 15.68 Heating 31.78																										
Space Sens. +Lat. W	Plenum Sens. +Lat W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)																												
Envelope Loads							Envelope Loads			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">AIRFLOWS</th> </tr> <tr> <td></td> <th style="text-align: center;">Cooling</th> <th style="text-align: center;">Heating</th> </tr> </thead> <tbody> <tr> <td>Diffuser</td> <td style="text-align: center;">0.27</td> <td style="text-align: center;">0.59</td> </tr> </tbody> </table>			AIRFLOWS				Cooling	Heating	Diffuser	0.27	0.59															
AIRFLOWS																																				
	Cooling	Heating																																		
Diffuser	0.27	0.59																																		
Roof+Ceiling Cond	291.00	0.00	291.00	8.58	291.00	20.30	Roof+Ceiling Cond	-172.13	-172.13	1.80																										
Solar Gain Windows	645.54	0.00	645.54	19.02	645.54	45.04	Solar Gain Windows	0.00	0.00	0.00																										
Window Cond	95.13	0.00	95.13	2.80	95.13	6.64	Window Cond	-983.62	-983.62	10.27																										
Wall+Partition Cond	198.39	0.00	198.39	5.85	198.39	13.84	Wall+Partition Cond	-3570.22	-3570.22	37.26																										
Floor, int/ext/grnd	-16.16	0.00	-16.16	-0.48	-16.16	-1.13	Floor, int/ext/grnd	175.73	175.73	-1.83																										
Infiltration	219.49	0.00	219.49	6.47	219.49	13.84	Infiltration	-1962.49	-1962.49	20.48																										
Sub Total ==>	1433.38	0.00	1433.38	42.24	1433.38	0.00	Sub Total ==>	-6512.73	-6512.73	67.97																										
Internal Loads							Internal Loads			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">ENGINEERING CKS</th> </tr> <tr> <td></td> <th style="text-align: center;">Cooling</th> <th style="text-align: center;">Heating</th> </tr> </thead> <tbody> <tr> <td>% OA</td> <td style="text-align: center;">64.94</td> <td style="text-align: center;">20.00</td> </tr> <tr> <td>l/s/m²</td> <td style="text-align: center;">2.43</td> <td style="text-align: center;">5.29</td> </tr> <tr> <td>l/s/ton</td> <td style="text-align: center;">243.73</td> <td style="text-align: center;">-</td> </tr> <tr> <td>m²/ton</td> <td style="text-align: center;">100.30</td> <td style="text-align: center;">-</td> </tr> <tr> <td>W/m²</td> <td style="text-align: center;">35.06</td> <td style="text-align: center;">107.68</td> </tr> <tr> <td>No. People</td> <td style="text-align: center;">50.05</td> <td style="text-align: center;">0.00</td> </tr> </tbody> </table>			ENGINEERING CKS				Cooling	Heating	% OA	64.94	20.00	l/s/m ²	2.43	5.29	l/s/ton	243.73	-	m ² /ton	100.30	-	W/m ²	35.06	107.68	No. People	50.05	0.00
ENGINEERING CKS																																				
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m ² /ton	100.30	-																																		
W/m ²	35.06	107.68																																		
No. People	50.05	0.00																																		
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00																										
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00																										
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00																										
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00																										
Ventilation Load	1960.07	0.00	1960.07	57.76			Ventilation Load	-3069.22	-3069.22	32.03																										
Grand Total ==>	3393.45	0.00	3393.45	100.00	1433.38	100.00	Grand Total ==>	-9581.95	-9581.95	100.00																										
Sim Calcs Total ==>																																				
Sim Calcs Total ==>																																				

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION					
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C °C g/kg			Leave DB/WB/HR °C °C g/kg			Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C			
Main Clg	1.11	3.90	3.90	0.27	26.08	18.37	10.13	15.68	14.72	10.13	Floor	111.23	0.00	0.00	Main Htg	11.98	0.59	15.92	31.78
Total	1.11	3.90	0.00								Part	0.00	0.00	0.00	Total	11.98			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

02 Second Faculty 2

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat.	Plenum Sens. +Lat	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak	Coil Peak	Percent Of Total			
	W	W	W	(%)	W	(%)	Space Sens	Tot Sens	(%)			
Envelope Loads							Envelope Loads					
Roof+Ceiling Cond	-101.54	0.00	-101.54	-8.74	-101.54	-11.17	Roof+Ceiling Cond	-185.31	-185.31	4.78		
Solar Gain Windows	1020.29	0.00	1020.29	87.80	1020.29	112.24	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	98.31	0.00	98.31	8.46	98.31	10.82	Window Cond	-1403.06	-1403.06	36.22		
Wall+Partition Cond	-55.80	0.00	-55.80	-4.80	-55.80	-6.14	Wall+Partition Cond	-661.10	-661.10	17.06		
Floor, int/ext/grnd	-197.85	0.00	-197.85	-17.02	-197.85	-21.76	Floor, int/ext/grnd	85.30	85.30	-2.20		
Infiltration	145.59	0.00	145.59	12.53	145.59	-6.14	Infiltration	-1313.26	-1313.26	33.90		
Sub Total ==>	909.01	0.00	909.01	78.22	909.01	0.00	Sub Total ==>	-3477.45	-3477.45	89.76		
Internal Loads							Internal Loads					
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	253.09	0.00	253.09	21.78			Ventilation Load	-396.66	-396.66	10.24		
Grand Total ==>	1162.10	0.00	1162.10	100.00	909.01	100.00	Grand Total ==>	-3874.11	-3874.11	100.00		
Sim Calcs Total ==>	1343.54	0.00	1343.54									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.09	0.24

ENGINEERING CKS		
	Cooling	Heating
% OA	41.27	6.29
l/s/m ²	1.24	3.26
l/s/ton	209.50	-
m ² /ton	169.24	-
W/m ²	20.78	65.12
No. People	6.47	0.00

COOLING COIL SELECTION										AREAS			HEATING COIL SELECTION					
	Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass	Ratio	Capacity	Coil Airflow	Ent	Lvg		
	ton	kW	m ³ /s	°C	°C	g/kg	°C	°C	g/kg	m ²	m ²	%	kW	m ³ /s	°C	°C		
Main Clg	0.44	1.55	1.33	0.09	25.32	17.88	9.83	14.93	13.52	9.14	74.35	0.00	0.00	Main Htg	4.84	0.24	19.40	35.00
Total	0.44	1.55	0.00								0.00	0.00	0.00	Total	4.84			
											0.00	0.00	0.00					
											0.00	0.00	0.00					
											0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

02 Second LAB 1

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat. W	Plenum Sens. +Lat W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)			
Envelope Loads							Envelope Loads					
Roof+Ceiling Cond	-1941.95	0.00	-1941.95	-13.66	-1941.95	-30.29	Roof+Ceiling Cond	-1195.87	-1195.87	3.87		
Solar Gain Windows	12916.24	0.00	12916.24	90.88	12916.24	201.48	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	1831.63	0.00	1831.63	12.89	1831.63	28.57	Window Cond	-3460.01	-3460.01	11.19		
Wall+Partition Cond	-1172.98	0.00	-1172.98	-8.25	-1172.98	-18.30	Wall+Partition Cond	-6786.02	-6786.02	21.95		
Floor, int/ext/grnd	-6089.23	0.00	-6089.23	-42.85	-6089.23	-94.99	Floor, int/ext/grnd	557.63	557.63	-1.80		
Infiltration	866.87	0.00	866.87	6.10	866.87	-18.30	Infiltration	-7819.55	-7819.55	25.29		
Sub Total ==>	6410.59	0.00	6410.59	45.11	6410.59	0.00	Sub Total ==>	-18703.82	-18703.82	60.49		
Internal Loads							Internal Loads					
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	7801.57	0.00	7801.57	54.89			Ventilation Load	-12216.26	-12216.26	39.51		
Grand Total ==>	14212.15	0.00	14212.15	100.00	6410.59	100.00	Grand Total ==>	-30920.07	-30920.07	100.00		
Sim Calcs Total ==>	14103.19	0.00	14103.19									

AIRFLOWS		
	Cooling	Heating
Diffuser	1.12	2.34

ENGINEERING CKS		
	Cooling	Heating
% OA	63.93	20.00
l/s/m ²	2.54	5.29
l/s/ton	243.73	-
m ² /ton	96.00	-
W/m ²	36.64	87.30
No. People	199.22	0.00

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION			
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C		Leave DB/WB/HR °C		Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C			
Main Clg	4.61	16.22	1.12	26.05	18.36	10.13	15.65	14.70	10.13		Main Htg	38.65	2.34	15.92 28.78			
Total	4.61	16.22	0.00								Total	38.65					
							Floor Part	442.71	0.00	0.00							
							ExFlr	0.00	0.00	0.00							
							Roof	0.00	0.00	0.00							
							Wall	0.00	0.00	0.00							

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

02 Second Lecture Hall

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat. W	Plenum Sens. +Lat. W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)			
Envelope Loads							Envelope Loads					
Roof+Ceiling Cond	661.17	0.00	661.17	9.06	661.17	18.42	Roof+Ceiling Cond	-558.69	-558.69	3.65		
Solar Gain Windows	1546.85	0.00	1546.85	21.20	1546.85	43.10	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	142.08	0.00	142.08	1.95	142.08	3.96	Window Cond	-2295.28	-2295.28	15.00		
Wall+Partition Cond	68.37	0.00	68.37	0.94	68.37	1.90	Wall+Partition Cond	-3199.41	-3199.41	20.91		
Floor, int/ext/grnd	758.80	0.00	758.80	10.40	758.80	21.14	Floor, int/ext/grnd	269.24	269.24	-1.76		
Infiltration	411.89	0.00	411.89	5.65	411.89	1.90	Infiltration	-3715.41	-3715.41	24.28		
Sub Total ==>	3589.15	0.00	3589.15	49.19	3589.15	0.00	Sub Total ==>	-9499.55	-9499.55	62.07		
Internal Loads							Internal Loads					
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	3706.88	0.00	3706.88	50.81			Ventilation Load	-5804.49	-5804.49	37.93		
Grand Total ==>	7296.03	0.00	7296.03	100.00	3589.15	100.00	Grand Total ==>	-15304.04	-15304.04	100.00		
Sim Calcs Total ==>	7279.46	0.00	7279.46									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.58	1.11

ENGINEERING CKS		
	Cooling	Heating
% OA	62.00	20.00
l/s/m ²	2.76	5.29
l/s/ton	243.73	-
m ² /ton	88.37	-
W/m ²	39.80	90.94
No. People	94.66	0.00

COOLING COIL SELECTION										
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C			Leave DB/WB/HR °C			
				°C	°C	g/kg	°C	°C	g/kg	
Main Clg	2.38	8.37	8.37	0.58	25.98	18.34	10.13	15.59	14.68	10.13
Total	2.38	8.37	0.00							

AREAS			
	Gross Total m ²	Glass m ²	Ratio %
Floor Part	210.35	0.00	0.00
ExFlr	0.00	0.00	0.00
Roof	0.00	0.00	0.00
Wall	0.00	0.00	0.00

HEATING COIL SELECTION				
	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C
Main Htg	19.13	1.11	15.92	29.31
Total	19.13			

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

02 Second Faculty 1

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating
	Space Sens. +Lat.	Plenum Sens. +Lat	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total			
	W	W	W	(%)	W	(%)	W	W	(%)			
Envelope Loads												
Roof+Ceiling Cond	85.83	0.00	85.83	7.55	85.83	9.09	Roof+Ceiling Cond	-145.64	-145.64	3.38		
Solar Gain Windows	472.93	0.00	472.93	41.60	472.93	50.08	Solar Gain Windows	0.00	0.00	0.00		
Window Cond	65.96	0.00	65.96	5.80	65.96	6.98	Window Cond	-762.91	-762.91	17.69		
Wall+Partition Cond	162.67	0.00	162.67	14.31	162.67	17.23	Wall+Partition Cond	-2195.28	-2195.28	50.90		
Floor, int/ext/grnd	46.09	0.00	46.09	4.05	46.09	4.88	Floor, int/ext/grnd	93.50	93.50	-2.17		
Infiltration	110.87	0.00	110.87	9.75	110.87	17.23	Infiltration	-1000.13	-1000.13	23.19		
Sub Total ==>	944.34	0.00	944.34	83.06	944.34	0.00	Sub Total ==>	-4010.46	-4010.46	93.00		
Internal Loads												
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00		
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00		
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00		
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00		
Ventilation Load	192.59	0.00	192.59	16.94			Ventilation Load	-302.08	-302.08	7.00		
Grand Total ==>	1136.94	0.00	1136.94	100.00	944.34	100.00	Grand Total ==>	-4312.54	-4312.54	100.00		
Sim Calcs Total ==>												
	1345.64	0.00	1345.64									

AIRFLOWS		
	Cooling	Heating
Diffuser	0.09	0.28

ENGINEERING CKS		
	Cooling	Heating
% OA	35.37	4.15
l/s/m ²	1.59	4.93
l/s/ton	204.56	-
m ² /ton	128.68	-
W/m ²	27.33	95.20
No. People	4.93	0.00

COOLING COIL SELECTION										AREAS			HEATING COIL SELECTION						
	Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR		Leave DB/WB/HR		Gross Total	Glass	Ratio	Capacity	Coil Airflow	Ent	Lvg					
	ton	kW	m ³ /s	°C	°C	g/kg	°C	°C	g/kg	m ²	m ²	%	kW	m ³ /s	°C	°C			
Main Clg	0.44	1.55	1.30	0.09	25.13	17.58	9.54	14.74	13.05	8.74	Floor	56.62	0.00	0.00	Main Htg	5.39	0.28	19.95	35.00
Total	0.44	1.55	0.00								Part	0.00	0.00	0.00	Total	5.39			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



Zone Checksums

02 Second Tutorial

Zone Multiplier: 1

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES				
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB				
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4			Cooling		Heating		
	Space Sens. +Lat. W	Plenum Sens. +Lat. W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)					
Envelope Loads							Envelope Loads							
Roof+Ceiling Cond	208.06	0.00	208.06	5.72	208.06	12.42	Roof+Ceiling Cond	-289.59	-289.59	2.98				
Solar Gain Windows	648.34	0.00	648.34	17.84	648.34	38.71	Solar Gain Windows	0.00	0.00	0.00				
Window Cond	85.38	0.00	85.38	2.35	85.38	5.10	Window Cond	-989.89	-989.89	10.20				
Wall+Partition Cond	192.03	0.00	192.03	5.28	192.03	11.46	Wall+Partition Cond	-3571.92	-3571.92	36.79				
Floor, int/ext/grnd	323.45	0.00	323.45	8.90	323.45	19.31	Floor, int/ext/grnd	176.23	176.23	-1.82				
Infiltration	217.79	0.00	217.79	5.99	217.79	11.46	Infiltration	-1964.58	-1964.58	20.23				
Sub Total ==>	1675.04	0.00	1675.04	46.08	1675.04	0.00	Sub Total ==>	-6639.76	-6639.76	68.39				
Internal Loads							Internal Loads							
Lights	0.00	0.00	0.00	0.00	0.00	0.00	Lights	0.00	0.00	0.00				
People	0.00	0.00	0.00	0.00	0.00	0.00	People	0.00	0.00	0.00				
Misc	0.00	0.00	0.00	0.00	0.00	0.00	Misc	0.00	0.00	0.00				
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	Sub Total ==>	0.00	0.00	0.00				
Ventilation Load	1960.07	0.00	1960.07	53.92			Ventilation Load	-3069.22	-3069.22	31.61				
Grand Total ==>	3635.11	0.00	3635.11	100.00	1675.04	100.00	Grand Total ==>	-9708.98	-9708.98	100.00				
Sim Calcs Total ==>										3632.90	0.00	3632.90		

AIRFLOWS		
	Cooling	Heating
Diffuser	0.29	0.59

ENGINEERING CKS		
	Cooling	Heating
% OA	63.35	20.00
l/s/m ²	2.60	5.29
l/s/ton	243.73	-
m ² /ton	93.63	-
W/m ²	37.56	109.11
No. People	50.05	0.00

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION					
	Total Capacity ton	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C			Leave DB/WB/HR °C			Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C			
Main Clg	1.19	4.18	4.18	0.29	26.03	18.35	10.13	15.63	14.70	10.13	Floor	111.23	0.00	0.00	Main Htg	12.14	0.59	15.92	31.99
Total	1.19	4.18	0.00								Part	0.00	0.00	0.00	Total	12.14			
											ExFlr	0.00	0.00	0.00					
											Roof	0.00	0.00	0.00					
											Wall	0.00	0.00	0.00					

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1



System Checksums

Default

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES			
Peaked at Time:		Mo/Hr: 6 / 15:00			Mo/Hr: 6 / 15:00		Mo/Hr: - / -			SADB		Cooling	Heating
Outside Air:		OADB/WB/RH: 27.2 / 18.7 / 44.7			OADB: 27.2		OADB: -4.4					-	-
	Space Sens. +Lat. W	Plenum Sens. +Lat. W	Net Total W	Percent Of Total (%)	Space Sensible W	Percent Of Total (%)	Space Peak Space Sens W	Coil Peak Tot Sens W	Percent Of Total (%)	AIRFLOWS			
										Diffuser	Cooling	Heating	
Envelope Loads													
Roof+Ceiling Cond	-10377.22	0.00	-10377.22	-10.18	-10377.22	-23.24	-14342.53	-14342.53	5.49				
Solar Gain Windows	120501.16	0.00	120501.16	118.20	120501.16	269.90	0.00	0.00	0.00				
Window Cond	13472.82	0.00	13472.82	13.22	13472.82	30.18	-35315.55	-35315.55	13.52				
Wall+Partition Cond	-24130.54	0.00	-24130.54	-23.67	-24130.54	-54.05	-65230.67	-65230.67	24.97				
Floor, int/ext/grnd	-61910.62	0.00	-61910.62	-60.73	-61910.62	-138.67	5313.00	5313.00	-2.03				
Infiltration	7090.73	0.00	7090.73	6.96	7090.73	-54.05	-61676.66	-61676.66	23.61				
Sub Total ==>	44646.31	0.00	44646.31	43.79	44646.31	0.00	-171252.42	-171252.42	65.55				
Internal Loads													
Lights	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
People	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Misc	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Sub Total ==>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Ventilation Load	57298.23	0.00	57298.23	56.21			-89992.59	-89992.59	34.45				
Grand Total ==>	101944.54	0.00	101944.54	100.00	44646.31	100.00	-261245.01	-261245.01	100.00				
ENGINEERING CKS													
										% OA	Cooling	Heating	
										64.90	-	-	
										l/s/m ²	-	-	
										l/s/ton	-	-	
										m ² /ton	108.12	-	
										W/m ²	32.53	-	
										No. People	1546.05	0.00	
Sim Calcs Total ==>	101289.18	0.00	101289.18										

COOLING COIL SELECTION											AREAS			HEATING COIL SELECTION				
	Total Capacity ton	kW	Sens Cap. kW	Coil Airflow m ³ /s	Enter DB/WB/HR °C °C g/kg			Leave DB/WB/HR °C °C g/kg			Gross Total m ²	Glass m ²	Ratio %	Capacity kW	Coil Airflow m ³ /s	Ent °C	Lvg °C	
Main Clg	33.12	116.48	115.22	-	-	-	-	-	-	-	Floor	3581.03	0.00	0.00	Main Htg	326.54	-	-
Total	33.12	116.48	0.00								Part	0.00	0.00	0.00	Total	326.54		
											ExFlr	0.00	0.00	0.00				
											Roof	0.00	0.00	0.00				
											Wall	0.00	0.00	0.00				

Note: Cooling/Heating coil capacities and airflow include design margins.

Project Name: Building
 Design alternative: Alternative system No.1